Amendment dated April 5, 2007 Reply to Office Action of January 5, 2007

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A compound of the general formula (I),

General Formula (I)

its tautomeric forms, its stereoisomers, its polymorphs, its pharmaceutically acceptable salts and solvates,

wherein R₁, R₂, R₃, R₄, R₅, R₆, R₇, R₈, R₉, R₁₀, R₁₁ and R₁₂ may be are the same or different and are each independently represent selected from the group consisting of hydrogen, halogen, perhaloalkyl, substituted or unsubstituted groups such as linear or branched (C₁-C₃)alkyl, (C₃-C₇)cycloalkyl, (C₁-C₃)alkoxy, cyclo(C₃-C₇)alkoxy, aryl, aryloxy, aralkyl, aralkoxy, heterocyclyl, acyl, acyloxy, acylamino, monoalkylamino, dialkylamino, hydroxyalkyl, alkoxyalkyl, aralkoxyalkyl, alkylthio, and sulfonic acids and its derivatives,

R₁₃ and R₁₄ may be are the same or different and are each independently represents selected from the group consisting of hydrogen, substituted or unsubstituted groups such as linear or branched (C₁-C₃)alkyl, and (C₃-C₇)cycloalkyl, optionally or R₁₃, and R₁₄ along taken together with the nitrogen atom to which they are attached, may form a 6 or 7- membered

heterocyclic ring, wherein the ring may be further is unsubstituted or substituted, and it may have either optionally contains one, two or three double bonds or "additional heteroatoms", as defined above. heteroatoms; and

Docket No.: 03108/0202224-US0

"n" n is an integer ranging from 1 to 2. It is preferred that n be 1.

- 2. (Original) A compound according to Claim-1, which is selected from the group consisting of:
 - 11-(2-N,N-Dimethylaminoethyl)isoindolo[2,1-a]indol-6-one;
 - 11-[(2-N,N-Dimethylamino)ethyl]-2-fluoroisoindolo[2,1-a]indol-6-one;
 - 11-[(2-N,N-Dimethylamino)ethyl]-2-fluoroisoindolo[2,1-a]indol-6-one hydrocloride salt;
 - 11-[(2-N,N-Dimethylamino)ethyl]-2-fluoroisoindolo[2,1-a]indol-6-one maleic acid salt;
 - 11-[(2-N,N-Dimethylamino)ethyl]-2-fluoroisoindolo[2,1-a]indol-6-one D,L-malic acid salt;
 - 11-[(2-N,N-Dimethylamino)ethyl]-2-fluoroisoindolo[2,1-a]indol-6-one oxalate salt;
 - 11-[(2-N,N-Dimethylamino)ethyl]-2-fluoroisoindolo[2,1-a]indol-6-one citrate salt;
 - 11-[(2-N-cyclopropyl-N-methylamino)ethyl]-2-fluoroisoindolo[2,1-a]indol-6-one;
 - 11-[2-N-cyclopropylaminoethyl]-2-flouroisonoindolo[2,1-a]indol-6-one;
 - 2-Bromo-11-[(2-N,N-dimethylamino)ethyl]isoindolo[2,1-a]indol-6-one;
 - 2-Chloro-11-[(2-N,N-dimethylamino)ethyl]isoindolo[2,1-a]indol-6-one;
 - 4-Chloro-11-[(2-N,N-dimethylamino)ethyl]isoindolo[2,1-a]indol-6-one;
 - 11-[(2-N,N-Dimethylamino)ethyl]-2-methylisoindolo[2,1-a]indol-6-one;
 - 11-[(2-N.N-Dimethylamino)ethyl]-2-methoxyisoindolo[2,1-a]indol-6-one;
 - 11-[(2-N,N-Dimethylamino)ethyl]-4-methoxyisoindolo[2,1-a]indol-6-one;
 - 11-[(2-N,N-Dimethylamino)ethyl]-4-trifluoromethylisoindolo[2,1-a]indol-6-one;
 - 11-[(2-N,N-Dimethylamino)ethyl]-4-ethylisoindolo[2,1-a]indol-6-one;
 - 11-[(2-N,N-Dimethylamino)ethyl]-2,4-difluoroisoindolo[2,1-a]indol-6-one;
 - 2,4-Dichloro-11-[(2-N,N-dimethylamino)ethyl]isoindolo[2,1-a]indol-6-one;
 - 3,4-Dichloro-11-[(2-N,N-dimethylamino)ethyl]isoindolo[2,1-a]indol-6-one;
 - 1,2,4-Trichloro11-[(2-N,N-dimethylamino)ethyl]isoindolo[2,1-a]indol-6-one;
 - 11-[(2-N,N-Dimethylamino)ethyl]-2,4-dimethylisoindolo[2,1-a]indol-6-one;

Amendment dated April 5, 2007

Reply to Office Action of January 5, 2007

11-[(2-N,N-Dimethylamino)ethyl]-3,4-dimethylisoindolo[2,1-a]indol-6-one;

1-Chloro-11-[(2-N,N-dimethylamino)ethyl]-4-methylisoindolo[2,1-a]indol-6-one;

3-Chloro-11-[(2-N,N-dimethyl-N-acetylamino)ethyl]-4-methylisoindolo[2,1-a]indol-6-one;

11-[(2-N,N-Dimethylamino)propyl]-4-methylisoindolo[2,1-a]indol-6-one;

3-Chloro-11-[(2-N-methylamino)ethyl]-4-methylisoindolo[2,1-a]indol-6-one;

3-Chloro-11-[(2-N-methyl-N-acetylamino)ethyl]-4-methylisoindolo[2,1-a]indol-6-one;

3-Chloro-11-[(2-N-methylamino)ethyl]-2-methoxyisoindolo[2,1-a]indol-6-one;

3-Chloro-11-[(2-N-methylamino)ethyl]-2-sulfoamidoisoindolo[2,1-a]indol-6-one;

3-Iodo-11-[(2-N-methylamino)ethyl]-2-methoxyisoindolo[2,1-a]indol-6-one;

2-Bromo-11-[(2-morpholin-1-yl)ethyl]isoindolo[2,1-a]indol-6-one;

2-Bromo-11-[2-(4-methylpiperazin-1-yl)ethyl]isoindolo[2,1-a]indol-6-one;

and its stereoisomers, its N-oxides, its polymorphs, its pharmaceutically acceptable salts and solvates.

- 3. (Currently amended) A pharmaceutical composition comprising either of a pharmaceutically acceptable carrier, diluent/s, excipient/s or solvates along with diluent or excipient and a therapeutically effective amount of a compound according to Claim-1 claim 1, its tautomeric forms, its stereoisomers, its geometric forms, its N-oxides, its polymorphs, its pharmaceutically acceptable salts, or solvates.
- 4. (Currently amended) A pharmaceutical composition according to Claim 3, which is in the form of a tablet, capsule, powder, <u>lozenge</u>, <u>suppository</u>, <u>lozenges</u>, <u>suppositories</u>, syrup, solution, suspension or injectable, <u>wherein said pharmaceutical composition is</u> administered in, as a single dose or <u>in</u> multiple dose units.
- 5. (Original) Use of compound of general formula (I), as defined in Claim-1 or a pharmaceutical composition as defined in Claim-3 for preparing medicaments.

Amendment dated April 5, 2007 Reply to Office Action of January 5, 2007

6. (Original) Use of compound of general formula (I), as defined in Claim-1 or a pharmaceutical composition as defined in Claim-9 for the treatment where a modulation of 5-HT activity is desired.

- 7. (Original) Use of a compound as claimed in Claim-1 for the manufacture of a medicament for the treatment and/or prevention of clinical conditions for which a selective action on 5-HT receptors is indicated.
- 8. (Original) Use of a compound as claimed in Claim-1 for the treatment and/or prevention of clinical conditions such as anxiety, depression, convulsive disorders, obsessive-compulsive disorders, migraine headache, cognitive memory disorders, ADHD (Attention Deficient Disorder/Hyperactivity Syndrome), personality disorders, psychosis, paraphrenia. psychotic depression, mania, schizophrenia, schizophreniform disorders, withdrawal from drug abuse, panic attacks, sleep disorders and also disorders associated with spinal trauma and/or head injury.
- 9. (Original) Use of a compound as claimed in Claim-1 for the treatment of mild cognitive impairment and other neurodegenerative disorders like Alzheimer's disease, Parkinsonism and Huntington's chorea.
- 10. (Original) Use of a compound as claimed in Claim-I for the treatment of certain GI (Gastrointestinal) disorders such as IBS (Irritable Bowel Syndrome) or chemotherapy induced emesis.
- 11. (Original) Use of a compound as claimed in Claim-I to reduce morbidity and mortality associated with the excess weight.
- 12. (Original) Use of a radiolabelled compound as claimed in Claim-1, as a diagnostic tool for modulating 5-HT receptor function.
- 13. (Original) Use of a compound as claimed in Claim 1 in combination with a 5-HT re-uptake inhibitor, and/or a pharmaceutically acceptable salt thereof.

Application No. 10/518,612 Docket No.: 03108/0202224-US0 Amendment dated April 5, 2007

Reply to Office Action of January 5, 2007

14. (Original) A compound of the general formula (I), its tautomeric forms, its stereoisomers, its

polymorphs, its pharmaceutically acceptable salts and its pharmaceutically acceptable solvates for

preparing a medicament.

15. (Original) A method for the treatment and/or prophylaxis of clinical conditions such as

anxiety, convulsive disorders, obsessive-compulsive disorders, migraine headache, cognitive

memory disorders, ADHD (Attention Deficient Disorder/Hyperactivity Syndrome), personality

disorders, psychosis, paraphrenia, psychotic depression, mania, schizophrenia, schizophreniform

disorders, withdrawal from drug abuse, panic attacks, sleep disorders and also disorders associated

with spinal trauma and/or head injury which comprises administering to a patient in need thereof, an

effective amount of a compound of general formula (I) as claimed in Claim-1.

16. (Original) A method for the treatment and/or prophylaxis of mild cognitive impairment and

other neurodegenerative disorders like Alzheimer's disease, Parkinsonism and Huntington's chorea

which comprises administering to a patient in need thereof, an effective amount of a compound of

general formula (I) as claimed in Claim-1.

17. (Original) A method for the treatment of certain GI (Gastrointestinal) disorders such as IBS

(Irritable Bowel Syndrome) or chemotherapy induced emesis using a compound of general formula

(I) as claimed in Claim-1.

18. (Original) A method to reduce morbidity and mortality associated with the excess weight

using a compound of general formula (I) as claimed in Claim-1.

19. (Currently amended) A process for the preparation of a compound according to claim 1 of

general formula (I), as defined in Claim 1, which comprises of any one of the following-routes

comprising a step selected from one of steps i)-iv),

Route i): cyclizing a compound of formula (II) using a Pd(0) or Pd(II) derivative as a

catalyst given below,

8

$$R_{13}$$
 R_{10}
 R_{14}
 R_{10}
 R_{14}
 R_{11}
 R_{12}
 R_{11}
 R_{12}
 R_{13}
 R_{14}
 R_{14}
 R_{15}
 R_{15}
 R_{15}
 R_{16}
 R_{17}
 R_{18}
 R_{19}
 R_{11}
 R_{12}
 R_{11}
 R_{12}
 R_{12}
 R_{13}
 R_{14}
 R_{15}
 R

wherein X is halogen such chloro, bromo or iodo, R₁, R₂, R₃, R₄, R₅, R₆, R₇, R₈, R₉, R₁₀, R₁₁ and R₁₂, R₁₃, R₁₄ and "n", wherein all the symbols are as defined above,

R₁, R₂, R₃, R₄, R₅, R₆, R₇, R₈, R₉, R₁₀, R₁₁ and R₁₂ are the same or different and are each independently selected from the group consisting of hydrogen, halogen, perhaloalkyl, substituted or unsubstituted linear or branched (C₁-C₃)alkyl, (C₃-C₇,)cycloalkyl, (C₁-C₃)alkoxy, cyclo(C₃-C₇)alkoxy, aryl, aryloxy, aralkyl, aralkoxy, acyl, acyloxy, acylamino, monoalkylamino, dialkylamino, hydroxyalkyl, alkoxyalkyl, aryloxyalkyl, aralkoxyalkyl, alkylthio, and sulfonic acids;

 R_{13} and R_{14} are the same or different and are each independently selected from the group consisting of hydrogen, substituted or unsubstituted linear or branched (C_1 - C_3)alkyl, and (C_3 - C_7)cycloalkyl, or R_{13} , and R_{14} taken together with the nitrogen atom to which they are

Amendment dated April 5, 2007

Reply to Office Action of January 5, 2007

attached, form a 6 or 7- membered heterocyclic ring, wherein the ring is unsubstituted or substituted, and optionally contains one, two or three double bonds or heteroatoms; and n is an integer ranging from 1 to 2using a Pd(0) or Pd(II) derivative as a catalyst;

Route ii): reacting a compound of formula (III)-given below,

$$R_{2}$$
 R_{10}
 R_{10}
 R_{10}
 R_{10}
 R_{10}
 R_{10}
 R_{11}
 R_{12}
 R_{12}
 R_{11}
 R_{12}
 R_{12}
 R_{13}
 R_{14}
 R_{15}
 R_{15}
 R_{15}

wherein R₁, R₂, R₃, R₄, R₅, R₆, R₇, R₈, R₉, R₁₀, R₁₁ and R₁₂ and "n" are as defined above, with a suitable an alkylating agent such as selected from the group consisting of R₁₃ X, or R₁₄ X, and or R₁₃R₁₄X either in successive steps or in one step, wherein X is good a leaving group, such as halogen and hydroxyl;

R₁, R₂, R₃, R₄, R₅, R₆, R₇, R₈, R₉, R₁₀, R₁₁ and R₁₂ re the same or different and are each independently selected from the group consisting of hydrogen, halogen, perhaloalkyl, substituted or unsubstituted linear or branched (C₁-C₃)alkyl, (C₃-C₇)cycloalkyl, (C₁-C₃)alkoxy, cyclo(C₃-C₇)alkoxy, aryl, aryloxy, aralkyl, aralkoxy, acyl, acyloxy, acylamino, monoalkylamino, dialkylamino, hydroxyalkyl, alkoxyalkyl, aryloxyalkyl, aralkoxyalkyl, alkylthio, and sulfonic acids; and

Amendment dated April 5, 2007 Reply to Office Action of January 5, 2007

n is an integer ranging from 1 to 2;

Route iii): reacting a compound of formula (IV) given below,

$$R_{2}$$
 R_{3}
 R_{4}
 R_{4}
 R_{5}
 R_{6}
 R_{5}

wherein R₁, R₂, R₃, R₄, R₅, R₆, R₇, and R₈ are as defined above the same or different and are each independently selected from the group consisting of hydrogen, halogen, perhaloalkyl, substituted or unsubstituted linear or branched (C₁-C₃)alkyl, (C₃-C₇)cycloalkyl, (C₁-C₃)alkoxy, cyclo(C₃-C₇)alkoxy, aryl, aryloxy, aralkyl, aralkoxy, acyl, acyloxy, acylamino, monoalkylamino, dialkylamino, hydroxyalkyl, alkoxyalkyl, aryloxyalkyl, aralkoxyalkyl, alkylthio, and sulfonic acids;

with formaldehyde and a compound of formula (V) given below,

$$NR_{13}R_{14}$$

(V)

wherein R₁₃ and R₁₄ are as defined above the same or different and are each independently selected from the group consisting of hydrogen, substituted or unsubstituted linear or branched (C₁-C₃)alkyl, and (C₃-C₇)cycloalkyl, or R₁₃, and R₁₄ taken together with the nitrogen atom to which

Docket No.: 03108/0202224-US0

Application No. 10/518,612 Amendment dated April 5, 2007 Reply to Office Action of January 5, 2007

they are attached, form a 6 or 7- membered heterocyclic ring, wherein the ring is unsubstituted or substituted, and optionally contains one, two or three double bonds or heteroatoms; or

Route iv): either chemically or catalytically reducing compounds a compound of formula (I) containing a -C(=O) group/s in the side chain, to the corresponding -C(OH,H) or -C(H,H) containing compound.

- 20. (Currently amended) A process according to Claim-19 claim 19 further comprising of earrying out one or more of the following optional steps: i) removing any a protecting group; ii) resolving the a racemic mixture into pure enantiomers; by the known methods and iii) preparing a pharmaceutically acceptable salt of a compound of formula (I) and/or iv preparing a pharmaceutically acceptable or prodrug of the compound of formula (I) thereof.
- 21. (Original) Novel intermediates defined of general formula (IV)

$$R_2$$
 R_3
 R_4
 R_4
 R_5
 R_6
 R_7
 R_8
 R_7
 R_8
 R_7
 R_8

wherein R₁, R₂, R₃, R₄, R₅, R₆, R₇, and R₈ are as may be same or different and each independently represent hydrogen, halogen, perhaloalkyl, substituted or unsubstituted groups such as linear or branched (C₁-C₃)alkyl, (C₃-C₇)cycloalkyl, (C₁-C₃)alkoxy, cyclo(C₃-C₇)alkoxy, aryl, aryloxy, aralkyl, aralkoxy, heterocyclyl, acyl, acyloxy, acylamino, monoalkylamino, dialkylamino, hydroxyalkyl, alkoxyalkyl, aryloxyalkyl, aralkoxyalkyl, alkylthio, gulfonic acids and its derivatives.

22. (Original) A process provided for the preparation of novel intermediate of the general formula (IV) which comprises of cyclizing compounds of formula (VIII)

$$R_2$$
 R_3
 R_4
 R_5
 R_6
 R_7
 R_8
 R_8
 R_8

wherein, R₁, R₂, R₃, R₄, R₅, R₆, R₇, and R₈ are as defined above; X is halogeno such as chloro, bromo or iodo, using a Pd(0) or Pd (II) derivative as a catalyst.